June 21, 2002

Key Messages: Mainland King County Study Results

The Department of Ecology (Ecology) and Public Health – Seattle & King County (Public Health) studied soils in mainland southern King County for the presence of arsenic and lead. The study's purpose was to get an overall view of the general "footprint" of contamination in the county. The information helps establish the "big regional picture," but cannot determine specific levels on a smaller scale, such as a particular property or even a city.

The study focused on undeveloped locations, where the highest levels of contamination are most likely to be found.

Key facts about the study:

- The arsenic and lead levels measured to date are a concern, not an emergency.
- Hygiene and housekeeping measures in and around the home, work and recreation areas reduce your exposure to the lead and arsenic potentially associated with soil and dust.
- Soil studies to date provide a general understanding of the arsenic and lead "footprint," but not the contamination levels at individual properties.
    - Concentrations can vary greatly over short distances; no conclusions can be drawn about your property based on what we found at a place sampled nearby.
    - The study only evaluated undeveloped areas, which are most likely to have the highest contamination.
- Ecology and Public Health are working together to
    - Help people protect themselves from exposure to soil;
    - Better understand the location and extent of lead and arsenic contamination in soils;
    - Coordinate with local governments;
    - Develop sampling guidance and ways to remediate the contamination;
    - Identify and formally notice potentially liable persons (Asarco)

Where we found the highest contamination

We have found that arsenic and lead concentrations tend to be higher the closer you are to the former smelter at Ruston. Vashon and Maury Island, being closer to the former smelter, have higher contaminant levels than the mainland. When we studied undeveloped locations on the islands we found the highest concentrations at 460 ppm for arsenic and 1,300 ppm for lead.

The highest readings also closely follow the prevailing wind patterns in the central Puget Sound basin. The wind blows from the southwest to the northeast about 60 percent of the time. Wind blows from the northeast to the southwest about 40 percent of the time.

On mainland King County, we found the highest arsenic and lead concentrations closest to an imaginary line pointing to the Northeast from the former smelter site in Ruston. The further a sampling place was to either side of this line, the lower its concentration tended to be. Also, concentrations tended to decrease the further along this line a sampling place was from the former smelter.

Also, contamination tends to be higher on the windward side of hills and ridges than on the leeward side (relative to the smelter).

Concentrations vary greatly over short distances

Lead and arsenic concentrations can be very different over short distances. That's why you can't draw conclusions from this study about your property, even if we took samples within blocks or even yards from your home. This study covered a 200 square mile area with just 75 sample locations. That's enough to help us understand more about the general footprint of the Tacoma Smelter Plume, but not to draw conclusions about individual pieces of land or even neighborhoods or cities.

That's why it's so important for everyone to follow the health and hygiene practices outlined in the Community Protection Measures. Recently developed properties are likely to have a lower level of contamination, if any, but we can't know for sure without sampling. By keeping to the Community Protection Measures you can keep soil that may contain arsenic or lead away from yourself and your family.

How much can contamination vary? We have seen different borings a few yards away from each other at the same location vary by up to 500 percent. At the Everett Smelter Site, where Ecology is cleaning contaminated yards (contamination levels are much higher than in southern King County), we've found arsenic concentrations ranging from five to 500 ppm in the same yard.

Next steps

The Tacoma Smelter Plume is an unusually large and complex contamination problem. Solutions will take place for decades to come. Our next steps

- Pierce County, this spring and summer and next year: We'll sample undeveloped areas and some residential and child use areas in Pierce County on the Gig Harbor Peninsula and the mainland from Tacoma to the Thurston County line.
- King County mainland child use areas, summer 2003: This study will help give us more information about developed areas in general and areas used by small children in particular. While this study won't enable you to make conclusions about your property or neighborhood, we'll better understand how the Tacoma Smelter Plume affects developed areas.
- Property sampling guidance: The Area-Wide Task Force is developing guidance for people who would like to sample their land for arsenic or lead contamination. This information will be available on Web later this year.
- Under Washington's Model Toxic Control Act, Ecology researches the source of a site's contamination. We have been gathering and evaluating scientific evidence that will prove that the former Asarco, Inc. smelter in Ruston is the source of the contamination in the Tacoma Smelter Plume area. Taking this step will open a formal process involving the "potentially liable person." Asarco is under order by EPA and other states for many other remedial actions, and has claimed recently that it does not have sufficient funding to continue many cleanups due to economic conditions.

The fallout from the smelter in Ruston reminds us of the need to prevent, control and reduce all forms of pollution from today's sources so that our activities do not leave a toxic legacy for another era.

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